

REMARKS

In the July 27, 2006 Office Action, claims 1-21 (all pending claims) were rejected. This Response amends claims 1-6, 8-14, 16, and 18 and adds new claims 22 and 23. Support for the new claims can be found at, for example, FIG. 3, FIG. 4, and paragraph [0025] of Applicant's specification. Claims 1, 9, and 16 have been amended to better clarify the recited subject matter and to address typographical inconsistencies in the language. The amendments to the remaining claims address typographical inconsistencies in a manner that does not alter the scope of such claims, these non-substantive amendments are unrelated to patentability, and the full scope of equivalents is maintained for these amended claims. After entry of the foregoing amendments, claims 1-23 (23 total claims; 4 independent claims; additional claim fees are being submitted herewith) remain pending in the application. Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks.

Claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Moreton et al., USPA 2004/0013128, ("Moreton") in view of Proctor, USPA 2003/0048770 ("Proctor"). Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

Moreton discloses a WLAN access point ("AP") and a method to control the AP to allow multiple clients that utilize different wireless standards to transmit and receive data in a switched manner [Moreton, at Abstract]. Moreton teaches an AP and a method where two different wireless standards can be supported, but only one at a time [Moreton at paragraph 0014]. Although Moreton discloses an access point and a method that utilizes two different frequency bands in implementing a WLAN, Moreton still requires either the channel to be reserved prior to transmission or for the AP to sense the channel to determine if it is clear.

"[A]ccess to channel is controlled using a mechanism called carrier sense multiple access with

collision avoidance (CSMA/CA)” [Moreton, at paragraph 0072]. CSMA/CA is a distributed mechanism specifically referred to within 802.11 as a distributed coordination function (“DCF”) that listens to ensure that no other station is transmitting, and if it recognizes that the channel is being used, applies a random time during which to “back-off” until checking the channel again [Moreton, at paragraphs 0072-0075]. A further mechanism that may be incorporated is a request to send (“RTS”) and clear to send (“CTS”) frames in trying to avoid collisions (“RTS/CTS”). Moreton builds on RTS/CTS procedure by adding data to the RTS and CTS frames that inform the receiving station, transmitting station, and other stations on the network, the time period during which the channel has been reserved so that other clients on the network would not attempt to transmit data [Moreton, at paragraph 0084].

The Office Action contends that Moreton’s discussion of the suspension of contention free periods (“CFP”) results in “no reserving of a band prior to transmission and no sensing for communication activity on the band prior to transmission.” Applicant respectfully disagrees with this characterization of Moreton. Notably, Moreton specifically and unambiguously states that during suspension of CFP “each station must wait for a specific request from the access point, called a poll, before transmitting a frame” [Moreton, at paragraph 0075]. Furthermore, Moreton specifically and unambiguously states that “the stations will not transmit anything during a CFP unless requested to do so by the AP” [Moreton, at paragraph 0076]. The AP has control over access to the wireless transmission channels and the AP can make a channel dormant for a period of time [Moreton, at paragraph 0076]. Applicant submits that these contention free periods are indeed a mechanism for reserving the channel or band prior to data transmission.

Independent claim 1 recites “transmitting payload data exclusively on the first wireless band during a time period, without having to reserve the first wireless band prior to transmission and without sensing for communication activity on the first wireless band prior to transmission.” As mentioned above, the system of Moreton either requires the reservation of a channel (using the RTS/CTS mode or CFPs) or the sensing of the channel to determine if it is busy (basic mode). Claim 1 expressly recites just the opposite. Thus, a system that embodies that recited in claim 1 eliminates the possibility of even encountering a “back-off” time (delay) that is possible in the basic mode under Moreton. Accordingly, for this reason Moreton neither teaches nor suggests the system recited in claim 1.

Furthermore, claim 1 has been amended to clarify that the recited system is configured to accommodate payload data transmission from the first device to the second device using the first band and simultaneous (concurrent) payload data transmission, during one time period, from a third device to the first device using the second band. This simultaneous transmission is illustrated in Applicant's FIG. 4, and is described at paragraph 0025 of the specification.

Notably, the first device is able to transmit payload data to a destination device using the high frequency band while also receiving payload data from one or more other devices using the low frequency band, and this simultaneous transmit/receive function occurs during the same time period. In contrast, Moreton always operates in a switched manner, where communication on the first band is possible only when the AP instructs all of the mobile stations to cease transmission on the second band during the period of time for which the AP will be using the first band (and vice versa) [Moreton, at paragraphs 0070-0072]. In other words, the Moreton AP switches between two different modes (to support transmissions on the two different bands), and there is never a period of time when the AP simultaneously and concurrently services both channels/bands. Indeed, this characteristic is clearly shown in FIG. 9 of Moreton, where periods of time for the "AP on channel A" never overlap with any periods of time for the "AP on channel B". In direct contrast to this fundamental operating characteristic of Moreton, a system that embodies that recited in claim 1 can support truly simultaneous communication on both frequency bands and with a plurality of mobile units, as depicted in Applicant's FIG. 4.

Applicant recognizes that Moreton inaccurately states that "two networks can be supported simultaneously, although appearing to be on one network" [Moreton, at paragraph 0015]. However, as discussed above, Applicant submits that Moreton's use of "simultaneously" in this excerpt does not accurately reflect that shown in Moreton's FIG. 9 or that expressly disclosed throughout Moreton's specification. In other words, Moreton's use of "simultaneously" in paragraph 0015 is neither the same nor equivalent to Applicant's use of "simultaneously" in the context of claim 1. Accordingly, for this additional reason Moreton neither teaches nor suggests the system recited in claim 1.

Proctor does not cure the deficiencies of Moreton discussed above. Proctor discloses a technique for using directional antennas in wireless data transmission systems [Proctor, at Abstract]. The purpose of Proctor is to utilize a directional antenna array to improve the signal integrity to those clients in the network [Proctor, at paragraph 0007]. Although Proctor is

dealing with wireless networks, it embraces the RTS/CTS mechanism [see Proctor, at paragraphs 0014-0018]. Thus, the method in Proctor does not eliminate the need for preliminary broadcasts used to reserve a channel, such as the RTS/CTS mechanism, but incorporated such a mechanism into its design.

Accordingly, neither Moreton nor Proctor, alone or in combination, suggests or teaches each and every limitation recited in independent claim 1. Thus, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 1, and the claims depending therefrom (claims 2-8) should be withdrawn.

Similar to claim 1, claim 9 recites a method comprising “the first wireless device transmitting the payload data without having to reserve the first band and without sensing for communication activity on the first band prior to transmission.” Therefore, for at least the reasons discussed with respect to claim 1, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 9, and the claims depending therefrom (claims 10-15) should be withdrawn.

Similar to claim 1, claim 16 recites a device comprising “wherein payload data is unidirectionally transmitted during a time period using the smart antenna on the first band without having to reserve the first band prior to the transmission of the payload data and without sensing for communication activity on the first band prior to transmission.” Therefore, for at least the reasons discussed with respect to claim 1, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 16, and the claims depending therefrom (claims 17-21) should be withdrawn.

New independent claim 22, which presents no new matter, recites a method for wireless communication. Claim 22 recites that a first device transmits downstream payload data to a destination device using a high frequency band during a time period, and that the downstream payload data is transmitted as a plurality of sequential downstream data transmissions. In addition, claim 22 requires that the transmission of the downstream payload data occurs without having to make preparatory transmissions to reserve the high frequency band prior to transmission (similar to that recited in claim 1). In this regard, Applicant’s FIG. 4 depicts an example where three sequential downstream data transmissions (D1, D2, and D3) are sent from an AP to a destination device (MU 20). Notably, claim 22 also recites that during the same time period and between two of the sequential downstream data transmissions, the first wireless device also receives upstream payload data from at least one additional wireless device using a

low frequency band. In this regard, Applicant's FIG. 4 depicts an example where the AP receives upstream payload data (U2) from a wireless device (MU 21); in this example, the upstream payload data U2 is received by the AP between the downstream data transmissions D1 and D2.

Neither Moreton nor Proctor, alone or in combination, suggests or teaches each and every limitation recited in independent claim 22. Thus, it is respectfully submitted that claim 22 is allowable over Moreton and/or Proctor.

New claim 23, which depends from claim 22 and which includes no new matter, recites that during the same time period and between two of the sequential downstream data transmissions, the first wireless device also receives upstream acknowledgment data from the destination device. Applicant's FIG. 4 depicts one example where the AP receives ACK data between successive downstream data transmissions (one upstream ACK between D1 and D2, and another upstream ACK between D2 and D3). Moreover, claim 23 recites that during the same time period and between two of the sequential downstream data transmissions, the first wireless device also transmits downstream acknowledgement data to the at least one additional wireless device. Applicant's FIG. 4 depicts one example where the AP transmits ACK data in this fashion (one downstream ACK between D1 and D2, and another downstream ACK between D2 and D3).

Neither Moreton nor Proctor, alone or in combination, suggests or teaches each and every limitation recited in claim 23. Thus, it is respectfully submitted that claim 23 is allowable over Moreton and/or Proctor.

In conclusion, for the reasons given above, all claims now presently in the application are believed allowable and such allowance is respectfully requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned attorney at (480) 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent

abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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